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ABSTRACT

A study by a commission of the Michigan House of Representatives determined that the gap between what students need to know to become employed and what they are learning in school is widening. In Michigan and nationally, a serious mismatch has developed between the traditional basic skills that are taught in middle school and high school today and the new and different basic skills that are now required and being demanded in the workplace. With these thoughts in mind, the commission formulated five recommendations: (1) redefine the purpose of education to provide all students with the education, skills, and training needed to enable them to make a seamless transition from high school to further education or the world of work; (2) identify the jobs that will be available in the future and the education, skill level, and training that will be necessary to obtain those jobs; (3) the focus of education must be on the achievement of competencies and mastery of skills that students will need in the next century; (4) business and higher education are essential links in ensuring that students are provided with a successful school-to-work transition; and (5) funding cannot be addressed without understanding what exists today and what will be needed in the future. Recommendations were made to develop programs and educational curricula to address the five conclusions reached by the commission. (Contains 39 references.) (KC)

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ED 371 207

Redefining the purpose of Education

Providing students with a seamless transition from school-to-work

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Recommendations from the Speaker's Blue Ribbon Commission on Career/Technical Education

February 19, 1992

CE 066 699

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EXECUTIVE SUMMARY

There is increasing evidence that the gap between what our children need to know to become employed and what they are learning in our schools is growing.

We have developed a serious mismatch between the traditional "basic skills" we teach in middle school and high school today and the new and different "basic skills" that are now required and being demanded in the workplace.

Fundamental changes in the workplace, changes in demographics and increased global competition can no longer be ignored. If we do not ensure that the individuals who will make up the workforce of the future have the education, skills and training needed to meet the demands of the workplace, our standard of living, individual earnings and economic stability, could be in jeopardy of declining.

With these thoughts in mind, the Commission reached five essential conclusions that provided the foundation for its recommendations.

WE MUST REDEFINE THE PURPOSE OF EDUCATION.

The central purpose of our educational system must be to provide ***All*** students -- from preschool through higher education -- with the education, skills and training needed to enable them to make a seamless transition from high school to further education or the world of work.

This does not mean we must abandon or eliminate existing curriculum and assessment programs or that we should move toward a system of tracking our students.

Rather, using the model core curriculum outlined under PA 25 as the foundation, we must begin to integrate academics and relevant applications to work in elementary, middle and secondary schools so that both college-bound and non-college bound students are provided with a continuum of school-to-work transition programs that will enable them to move on to more specialized training and/or education.

WE MUST IDENTIFY THE JOBS THAT WILL BE AVAILABLE IN THE FUTURE AND THE EDUCATION, SKILL-LEVEL AND TRAINING THAT WILL BE NECESSARY TO OBTAIN THOSE JOBS.

Fundamental structural changes in the job market are occurring at a rate four to five times faster than curriculum and organizational changes in our schools, leaving a widening

gap between what students learn in the classroom and what is, and will be, expected of them in the workplace.

If we want our schools to provide students with the education and skills necessary for future employment, the essential and critical first step must be to identify and disseminate information on the jobs that will be available and the level of skills and training that will be needed to qualify for those jobs

A **Career/Technical Education Cabinet** must be appointed, composed of individuals representing education, business and organized labor and charged with the responsibility of developing a **STATEWIDE LABOR MARKET INFORMATION EXCHANGE SYSTEM** to gather, disseminate and provide accurate data on the employment and skill-level needs in the workplace.

In addition, the Cabinet must assist in broadening apprenticeship, internship and cooperative educational programs and examining the ways in which existing revenue from all sources can be used more efficiently and effectively to train and educate individuals for the workplace.

THE FOCUS OF EDUCATION MUST BE ON THE ACHIEVEMENT OF "COMPETENCIES" AND "MASTERY OF SKILLS" THAT STUDENTS WILL NEED IN THE 21st CENTURY.

We can no longer afford to graduate students based on ***seat-time***. The emphasis must be on ***outcomes*** achieved rather than on ***courses*** taken and on ***learning*** rather than ***memorizing***.

Nor can we continue to permit students to dropout of school or "fall through the cracks." We must prepare ALL students for the workplace and to do so, the educational system must become flexible enough to recognize and be able to respond to different needs and learning styles.

Schools must teach and incorporate into their educational program, the total array of skills, knowledge, behaviors and competencies needed in the workplace and students must be expected to demonstrate a **mastery of basic skills and subject area knowledge** before being permitted to advance to higher levels of learning in any given subject area.

Assessments and evaluations must be outcome based. Students having difficulty achieving the expected competencies must be provided with additional support.

Information and counseling about employment opportunities, and the skills needed to fulfill them, must be an essential component of a student's educational experience. Comprehensive, work-site based education must be provided in a wide range of occupational fields and complimented with related and advanced subject area study in high school. A

CERTIFICATE OF ACHIEVEMENT, **recognized by business** as an indication of competency, should be awarded to students successfully completing a Career/Technical area of study.

Most importantly, teacher training and professional development must be ongoing, extensive and a top priority if schools are to keep pace with the changing needs of business.

BUSINESS AND HIGHER EDUCATION ARE ESSENTIAL LINKS IN ENSURING THAT STUDENTS ARE PROVIDED WITH A SUCCESSFUL SCHOOL-TO-WORK TRANSITION.

Education and work can no longer be seen as two separate endeavors. We will not succeed in creating effective school-to-work transitions until business is an equal partner at the table with educators.

Both education and business must reach consensus on the desired outcomes of the educational process and then work together to create a system that will facilitate these expectations in the most effective manner possible.

As the major consumer of the educational product, business must invest in the educational system by helping to develop new models which expand the concept of apprentice/internship programs, assist in teacher training and furnishing ongoing information on the transformations in the workplace.

Higher education must be encouraged to provide advanced placement for students successfully completing a Career/Technical area of study, by taking into account the credits earned from such programs.

FUNDING CANNOT BE ADDRESSED WITHOUT UNDERSTANDING WHAT EXISTS TODAY AND WHAT WILL BE NEEDED IN THE FUTURE.

Before now, the issue of improving public education has always centered around funding -- how much will it cost, who will get it, what kinds of programs will it buy? We have rarely, if ever, asked what we got for it or what was needed.

The discussion should not center around whether we can afford to make the changes that are necessary, but whether we can afford not to. If our workers and businesses have any hope of competing in the global economy, we have no choice.

REDEFINING THE PURPOSE OF EDUCATION

* * *

PROVIDING STUDENTS
WITH A SEAMLESS TRANSITION
FROM SCHOOL-TO-WORK

INTRODUCTION

Since the mid-1980's, there has been increasing evidence and heightened public and private concern that the gap between what our children need to know to become employed and what they are learning in our schools is growing.

In response to this concern, the Blue Ribbon Commission was requested to analyze the ability of existing Vocational/Technical Education programs to provide students with the skills and training needed in the workplace; recommend ways to expand and improve such programs and recommend ways to help students make a seamless transition from secondary school to the workforce or continuing education, including the role that business should play in this effort.

The Commission received testimony from numerous individuals, including representatives from various sectors of the business, labor and educational community and experts familiar with the educational process in other countries. In addition, the Commission was provided with a myriad of national and state reports on this issue.

A consistent concern raised, both by those who testified and in the various reports, is the fact that, in spite of the school reforms that have been implemented over the last 10 years, we still are not preparing young people to succeed in the increasingly high-skills, high-performance jobs of the future.

It is argued that the hoped for improvement in public education over the last ten years has been less than successful because there was never a clear identification of the specific skills, knowledge and behaviors that business needed. Instead, it was generally assumed that increasing standards in the traditional basics would be sufficient to meet the changing needs of the workplace.

Data indicates, however, that while schools were in the process of implementing higher standards in traditional basic education programs, rapid technological advances,

automation and changing production processes were creating dramatic changes not only the level of skills needed, but in the KIND of skills needed.

As a result, we have a developed a serious mismatch between the traditional "basic skills" we teach in middle and high school today and the **NEW** and **DIFFERENT** "basic skills" that are now required and being demanded in the workplace.

This does not mean that current Vocational Education programs have failed to provide students with appropriate skills. On the contrary, the testimony received clearly showed that there are some areas of the state providing outstanding vocational/technical education programs. However, it was also emphatically pointed out that if we are to adequately meet the future needs of business, such programs must not only be improved and expanded, but that ALL students must be provided with the education and skills necessary to meet the needs of the workplace.

Another common and even more pressing concern expressed, was the sentiment that unless we change the way we educate and prepare all students for the workplace, our standard of living, individual earnings and economic stability, both in Michigan and across the nation, is in jeopardy of declining.

Three identifiable trends need to be looked at in order to fully understand why this concern has been raised.

The Changing Needs of the Workplace

Most research analysts and economists agree that unskilled labor is no longer considered an economic commodity. In 1950, 60% of **all jobs** in the nation were unskilled. Today the figure is 35% and it is projected to drop to 15% by the year 2000. By the 21st century, it is projected that the unskilled person will be fundamentally unemployable.

In 1900, 85% of the workers in the nation were in **agriculture production or farming**. By 1950, the number employed had dropped to 18%. Today, this sector only employs about 3% of the workers, but is able to produce twice the food it did in 1900, because of changes in technology and new work techniques and procedures.

Between 1950 and 1991, advanced automation and robotization reduced the percentage of workers in **production and manufacturing** from 73% to 17%. This change resulted in a shift away from mechanical equipment to electronic/microprocessors, requiring workers to have skills in advanced technological applications.

By the close of this decade, it is estimated that 44% of the workers will be employed in the **information sector**: the business of collecting, analyzing, synthesizing, storing and retrieving data. Today, 75% of the workers in the information sector are in skilled positions and 25% are employed as unskilled labor. By the year 2000, the number of jobs requiring

skilled workers will increase to 90%, leaving only 10% of the jobs open for individuals who are unskilled.

In the **service sector**, ATM machines have reduced the number of bank tellers and cashiers by 40% in the last five years and may replace another 40% in the next five years. Auto mechanics have evolved into auto technicians, with diagnostic equipment and computerized technical manuals being the new tools of the trade. In 1965, the average automobile service manual was 300 pages, Today, because most cars are computer-based, the manual for a 1991 car exceeds 476,000 pages. Similarly, advanced automation is being tested in some fast food restaurants, which could reduce or even eliminate the need for grill and counter personnel.

Recent estimates indicate that technology has reduced the span of time it takes for one-half of workers' skills to become obsolete from 7-14 years to 3-5 years. In other words, at a minimum, it is anticipated that **in order for our workforce to remain competitive, workers will have to be provided some kind of retraining or additional education every 3-5 years.**

The fastest growing jobs in the future will require workers with higher skills levels. The minimal-skill jobs that will remain are projected to be in low-growth, low-paying positions.

In short, fundamental structural changes in the job market are occurring at a rate four to five times faster than curriculum and organizational changes in our schools, leaving a widening gap between what students learn in the classroom and what is, and will be, expected of them in the workplace.

The Shrinking Workforce

Compounding the pressures of an increasingly complex world of work are the dramatic demographic changes projected to occur.

Declining birth rates clearly indicate that the future labor force is going to be substantially smaller than it is today.

In 1950, for example, 17 people worked for each 1 retiree. Today, there are 3 workers for each retiree and by the year 2030, it is estimated that there will be one worker for every two retirees.

Not only is our present workforce aging, but advances in medicine and better health care have substantially increased the life span of our population. In fact, the fastest growing segment of our society are individuals who are age 85 and older.

In Michigan alone, census data indicates that the number of people between 74 and 84 years old increased by 26.1%, while the number of people 85 years and older increased by 31%. By way of comparison, the number of 18-20 year-olds decreased by 21.4% and the number of individuals in the 21-24 age group fell 28.2%.

In 1965, if you were 65 years old, your chances of living until age 90 was 7.4%. Today, if you are 65, your chances of living until 90 is 30%. By the year 2000, it is estimated that more than 1 million Americans will be 100 years or older. For the first time in history, we will have two generations of families collecting Social Security.

Even more striking than the slowdown in growth and the accompanying aging of the labor force, is the projected shift in its composition.

Those groups which have traditionally faced the greatest barriers to full participation in the labor force will comprise an increasing percentage of the workers. It is estimated, for example, that African Americans, Hispanics and other minorities will comprise 26% of the workforce in the year 2000, while women will account for more than 60% of the labor force growth.

The Global Competition

Much has been written comparing the educational system in the United States with the educational system in other countries. In many instances, the focus has been on the difference in test results, which show that students from other countries are scoring significantly higher than American students in basic subject area knowledge.

Another difference that should be noted, however, is in what we expect of our students compared to the student expectations in other countries. For example, studies indicate that:

In Japan, high school graduates must have six years of English -- and 96% of the 18-year-olds graduate. China has 250 million people -- more than the U.S. population --who speak fluent English.

The 12-member European nations joining together will parallel economically with only one other country -- the United States. The graduation rate in each of the 12 member nations is over 90%. By 1996 and every year thereafter every high school graduate in the European community will be trilingual -- able to read, write and comprehend three languages.

In the 1950's the U.S. had the longest school year and the longest school day of all the countries. Today, studies show we have the shortest school year and the shortest school day. In Japan, high school students attend school 242 days a year, 41.5 hours a week, and

some 30 days of teacher in-service is required over and above the 242 day school year. In the U.S., our students attend school 180 days a year, 26.2 hours a week.

In short, the data clearly indicates that we have an aging workforce, a population that is living longer and a shrinking pool of workers, that will be largely composed of minorities and women, who we will depend on to maintain our economic health and keep us competitive in a growing international economy. Compounding these trends is the fact that other countries are setting higher standards and demanding more of their students than we are.

If we do not ensure that the individuals who will make up the workforce of the future have the education, skills and training needed to meet the demands of the workplace, then it is indeed possible that our standard of living, individual earnings and economic stability, could be in jeopardy of declining.

With these thoughts in mind, the Commission reached five essential conclusions that provided the foundation for its recommendations.

I. *THERE MUST BE A CONSCIOUS DECISION TO REDEFINE AND CLARIFY THE PURPOSE OF EDUCATION.*

The purpose of our educational system must be to provide ***All*** students -- from preschool to higher education -- with the education, skills and training needed to enable them to make a seamless transition from high school to further education or the world of work.

Overall, our educational system and society in general has allowed one standard of achievement -- the college-prep baccalaureate degree -- to predominate. And our money follows our priorities; we spend twice as much on individuals on the college/university path as we do on the rest of society. Yet, only 20% of adults have baccalaureate degrees or higher.

While not wishing to diminish or take away from the importance of a college degree, it must also be recognized that in a society as diverse as ours and in terms of the changing needs of the workplace, one definition of academic fulfillment will not do in the future.

This does not mean, however, that the Commission envisions, or recommends, abandoning or eliminating the courses, curricula and assessment programs currently in place.

This also is not intended to imply or suggest that the Commission members believe that Michigan should move toward a system of tracking our students or that the

students should be locked into a specific career or vocational program.

In fact, the members feel strongly that the current practice of subdividing our educational system into general education, college preparation and vocational education, in itself creates a tracking system that shortchanges the vast majority of our students.

Rather, it must be recognized that nearly all individuals will eventually go to work and because of this, education must be redefined so that school-to-work transitions become the essential component of every student and adult's educational program.

The data clearly indicates that more than three-quarters of our students fall off the education ladder -- by dropping out of high school, dropping out of college, or by graduating from high school in a general education track. Many of these students have no plans to continue their education, only minimal academic skills and no work skills.

Even those who complete college or who receive some specific vocational education training while in high school, will need to have the relevant skills, knowledge and behaviors that will be required in the workforce.

RECOMMENDATION:

Beginning in 1993 and over the next eight years, schools must develop and implement a plan to integrate academics and relevant applications to work in elementary, middle and secondary schools and provide students with the skills, knowledge, competencies and behaviors they will need in the workplace and as an adult.

Using existing curriculum and studies as the basis, schools must build interdisciplinary packages that focus on and incorporate both the **expanded** and **higher-level** basic skills that students will need in the workplace.

Education must provide all students a continuum of school-to-work transition programs that will enable both college-bound and non-college bound students the ability to move on to more specialized training in a variety of fields by building upon the applied academic skills learned in school.

II. *WE MUST IDENTIFY THE JOBS THAT WILL BE AVAILABLE IN THE FUTURE AND THE EDUCATION, SKILL-LEVEL AND TRAINING THAT WILL BE NECESSARY TO OBTAIN THOSE JOBS.*

If we expect our schools to provide students with the education and skills necessary for future employment, the critical first step must be for representatives of major

occupational fields to identify and disseminate the most up-to-date information possible on the jobs which will be available -- including the level of education, skills and training that will be needed to qualify for those jobs and the methods that should be used to evaluate competencies in the identified skill areas.

Without accurate and ongoing data on the changing employment and skill-level needs, it is impossible to establish the kind of comprehensive and cohesive picture of the job market necessary to compel change in the existing educational system.

RECOMMENDATION:

To accomplish this, the Commission proposes a two-step process.

1. First, that a 14-member **Career/Technical Education Cabinet** be jointly appointed by the Governor, the Speaker of the House and the Senate Majority Leader, based on nominations from the business and education communities and organized labor.

   Each interest group must be guaranteed equal representation on the Cabinet at all times and at least one member of the educational community must be a teacher.

   Because of the importance of the Statewide Cabinet in providing the necessary workplace data, the Commission members feel strongly that the Cabinet should be under the direction of the Legislative Council, rather than incorporated into an existing department. This would give it higher visibility and lessen the possibility of the Cabinet being subjected at some later date to cuts in funding that could cripple its ability to function.

   The Statewide Cabinet must also be provided with sufficient staff to enable it to accumulate the needed information and perform the responsibilities as directed in statute.

2. The Cabinet must be charged with the **responsibility of developing, and pending legislative approval, implementing a plan for:**

   -- creating an infrastructure for gathering accurate information on current and anticipated employment needs,

   -- determining the skills and education that will be required for those jobs, and

   -- assisting local school districts expand and improve existing educational programs to meet employment needs.

The plan must include, but is not limited, to all of the following:

- The criteria and method for establishing a new ***STATEWIDE LABOR MARKET INFORMATION EXCHANGE SYSTEM***, comprised of self-governing **State and Local Occupational Councils.**

  The **State Occupational Councils** shall be composed of professionals representative of major occupational areas and would be responsible for:

  -- Providing the Cabinet with ongoing and accurate information on employment opportunities and skill-level needs.

  -- Identifying the specific expectations they have of their employees and developing a uniform standard of competency that would be required for employment in each occupational area and recognized statewide.

  The **Local Occupational Councils** would be responsible for:

  -- assessing and providing information to the Cabinet on local and regional needs, and

  -- assisting local and intermediate school districts in implementing changes recommended by the Statewide Cabinet.

- The criteria and method for determining the competencies, skills and knowledge, including "employability skills," that will be needed in the workplace, based on information and recommendations provided by professionals from the State Occupational Councils.

- The criteria and method for assessing whether existing curriculum and programs, based on the Model Core Curriculum requirements outlined under P.A. 25, are reflective of the knowledge/skill levels that will be needed in the workplace.

- The criteria and method for expanding, implementing and coordinating comprehensive youth apprenticeship programs, internships and cooperative educational programs within the educational system.

- The criteria and method for identifying and examining the ways in which existing revenue is being used to train/educate individuals for

the workplace -- including state, federal and private resources -- and making recommendations on a more efficient and effective use of such funds and whether additional funding is needed and for what purpose.

- The criteria and method for analyzing the educational expectations of community colleges and institutions of higher education and making recommendations pertaining to the role each should play in helping to provide students with a seamless transition from high school to college or work.

- The criteria and method by which the Statewide Cabinet will provide ongoing oversight over the Labor Market Exchange System and the State and Local Occupational Councils, including coordinating, monitoring and modifying the system as necessary.

The Cabinet would be required to present its initial recommendations to the Governor, both Houses of the Legislature and to the State Board of Education no later than January of 1994, and annually thereafter.

III. *THE FOCUS OF EDUCATION MUST BE ON THE ACHIEVEMENT OF "COMPETENCIES" AND "MASTERY OF SKILLS" THAT STUDENTS WILL NEED IN THE 21st CENTURY.*

We can no longer afford to graduate students based on "seat-time". The emphasis must be on ***outcomes*** achieved rather than on ***courses*** taken and on ***learning*** rather than ***memorizing***.

Nor can we continue to permit students to dropout of school or "fall through the cracks." With the projected decline in the labor force and the increasing need for skilled workers, permitting students to dropout or leave school without the competencies needed to become employed, guarantees nothing but a dead-end for such students and an increasing cost to society.

If the goal of education is to prepare students for the workplace, then ***ALL*** students must be provided with the education, skills and training that will be necessary to enable them to make a seamless transition from high school to further education or the world of work.

To do so, the educational system must become flexible enough to recognize and respond to the different needs and learning styles of students.

We traditionally cater to the passive style of learning, which is dominated by rote memorization and lecture. Instead, we must provide students with active hands-on

learning environments more compatible with the work world. Today we lose students in the sophomore and junior years because they don't relate to what we offer. We must help students understand ***why*** they must learn particular subject areas.

Equally important, students must be expected and required to play an active role and take responsibility for their own educational career. Students must be provided with opportunities to combine on-the-job experience and education as a means of career planning and decision making.

RECOMMENDATIONS

1. All students must be given assistance in developing and maintaining an ***Individualized Education/Employment Plan*** and portfolio of personal achievements.

2. All schools must teach and incorporate into their educational program, the total array of skills, knowledge, behaviors and competencies needed in the workplace, based on the recommendations made by the Statewide Cabinet.

   -- Particular emphasis must be placed on relevant reading, writing, speaking, listening, mathematics, and expanded basic skills taught at the application level or higher.

3. All students must be able to demonstrate a **mastery of basic skills and subject area knowledge** before being permitted to advance to higher levels of learning in any given subject area.

   -- Students must be permitted to work at their own pace. Rather than grade-level promotions, students would be advanced based upon successfully **mastering** individual **subject areas and skills.**

   -- For example, a student who may be deficient in one subject area, such as math, must not be held back or prevented from being advanced in other subject areas, such reading and writing.

4. Assessment/evaluation must be outcome based and must reflect the competencies outlined by the Statewide Cabinet and the State Occupational Councils.

5. Any student unable to successfully demonstrate a mastery of the basic skills or subject area knowledge, must be provided with additional support and help from the school until they are able to meet the required competencies in any given subject area.

6. Pupils achieving the defined competencies would be awarded ***CERTIFICATES OF INITIAL AND ADVANCED MASTERY*** in recognition that they had achieved the expected outcomes.

7. Based on information provided by the Statewide Cabinet, students must be provided with ongoing comprehensive, accurate information and counseling about employment opportunities and the skills needed to fulfill them no later than during their middle school education.

8. Students can no longer be permitted to dropout of high school. Students must be expected to stay in school until age 18 or until they have mastered the expected competencies.

9. Based upon the anticipated needs of business, as determined by the Statewide Cabinet, students entering high school must be given the opportunity to pursue a wide range of career/technical programs designed to provide them with the skills and qualifications needed to become employed or obtain additional education and training.

10. The student's **Individualized Education/Employability Plan** must clearly outline the necessary information for successfully completing the areas of career study selected by the student.

11. A comprehensive, work-site based education must be provided for students -- including apprenticeships, internships, cooperative-education programming in a wide range of occupational fields -- and complimented with related and advanced subject area study in high school.

12. Based on the work-related skills and education requirements identified by the Statewide Cabinet, students who successfully complete a full Career/Technical Area of study must be provided with a ***CERTIFICATE OF ACHIEVEMENT*** **that would be recognized by business** as an indication of competency in the subject area.

13. Schools must provide both students and business with an **Educational Warranty**, based on the proficiency/skill levels recommended by the Statewide Cabinet.

    If students are found to be deficient in the skills, training and/or education recommended by the Statewide Cabinet, the graduating high school must be held responsible for providing them with the additional education or providing the financial assistance necessary for such students to enroll in any other Michigan high school.

14. Teacher training and professional development must be ongoing, extensive and a top priority if we want and expect our schools to keep pace with the changing needs of business.

15. Schools must provide a minimum of 200 days, totaling 1200 instructional hours.

16. Both business and higher education, working in concert with K-12 education, must play an active role in providing students with a seamless transition from school-to-work.

IV. *BUSINESS AND HIGHER EDUCATION ARE ESSENTIAL LINKS IN ENSURING THAT STUDENTS ARE PROVIDED WITH A SUCCESSFUL SCHOOL-TO-WORK TRANSITION.*

Education and work can no longer be seen as two separate endeavors. We will not succeed in making an effective school-to-work transition until business is an equal partner at the table with educators.

Both education and business must reach consensus on the desired outcomes of the educational process and then work together to create a system that will facilitate these expectations in the most effective manner possible.

In creating that system, it must be recognized that structured on-the-job training, such as apprenticeships and internships, combined with classroom instruction are key components to helping students learn the job-specific skills needed by today's workers.

Studies indicate that between 40% and 60% of all high school students work part-time with little or no recognition of the connection between learning and their work experience. In fact, 40% of the adults age 25 years and older indicate that they saw little relevance between what they learned in school and their future career plans.

We must capitalize on that desire to work, by designing an educational system which helps students to get more out of their part-time employment, make wise occupational choices and obtain appropriate training.

RECOMMENDATIONS:

1. In addition to advising the Statewide Cabinet on the skills and knowledge that will be needed, business must provide on-the-job training and employment for students wishing to pursue such areas of study.

2. Business and higher education must assist in the effort to provide work-based education by developing models which expand the concept of apprentice/internship programs that can be applied to a variety of occupational areas and the appropriate curriculum to compliment such learning.

   The aspects of apprenticeship that can be applied more broadly include:

   - The basic format of structured on-the-job training combined with classroom or theoretical instruction,
   - The formal recognition, such as accreditation afforded programs and the awarding of worker credentials upon completion,
   - The transfer of skills on the job through a mentor or skilled supervisor,
   - The opportunity for the worker to acquire skills while earning a wage, and
   - A contract or agreement between the training sponsor and the trainee on the process and outcomes of training.

3. The new models must emphasize career areas, rather than specific jobs so that apprentices are exposed to a variety of occupations within a career area. **In all instances, the focus must be on providing students with broad and widely applicable knowledge and job skills.**

   Such expansion would provide students with greater opportunities for careers in a variety of occupations as well as equip business and industry with the competitive edge that a highly skilled workforce provides.

4. As the major consumer of the educational product, business must also invest in the educational system by assisting in ongoing teacher training, providing qualified personnel, purchasing equipment and furnishing continuing information on the changes that occur in the workplace.

5. Community Colleges, Proprietary Schools and Universities must be encouraged to provide advanced-placement for students successfully completing a Career/Technical area of study, by taking into account the credits earned from such programs.

6. Colleges and Universities should also be encouraged to restructure admission standards so that the emphasis is on **outcomes** rather than **courses** taken.

7. Higher education should collaborate with K-12 education to make equipment, labs and supplies available to local school districts when individual purchase of such equipment is not cost effective.

V. *FUNDING CANNOT BE ADDRESSED WITHOUT UNDERSTANDING WHAT EXISTS TODAY AND WHAT WILL BE NEEDED IN THE FUTURE.*

Traditionally, the issue of improving public education has centered around funding -- how much will it cost, who will get it, what kinds of programs will it buy? We have rarely, if ever, asked what we got for it or what was needed.

While the members of the Commission clearly recognized that the question of funding is and will be one of the key issues in implementing a change of this nature, it must be realized that funding cannot be addressed without a clear understanding of what exists today and what will be expected and needed in the future.

Only by comparing existing educational programs with the future needs of the workplace can one intelligently evaluate what changes might be needed in funding.

Accordingly, it is proposed that part of the charge given to the Statewide Cabinet must be to identify the ways in which existing revenue from all sources -- federal, state and private resources alike -- is being used to train/educate individuals for the workplace and to determine if there is a more efficient and effective way to utilize such funds.

If, after determining what changes are needed and analyzing how existing revenue is being used, it is concluded that additional revenue is necessary, then the Cabinet, in its recommendations to the Legislature, must clearly indicate why additional funding is needed and what it will buy.

For the Commission members to make such recommendations without the necessary background information, would not only be inappropriate, it could prove counterproductive if the issue of funding, rather than the question of **WHY** change is needed, became the focus of discussion and debate.

SUMMARY

Fundamental changes in the workplace, anticipated changes in demographics and increased global competition can no longer be ignored. Data, studies and trends create a clear and compelling picture that unless we take decisive action, the vast majority of our students will leave school structurally unemployable for the jobs that will be available in the future.

We must redefine the purpose of education so that ***All*** students -- preschool through higher education -- are provided with the education, skills and training needed to enable them to make a seamless transition from high school to further education or the world of work.

The focus of education must be on the achievement of "competencies" and "mastery of skills" that students will need in the 21st century. We can not afford to graduate students based on "seat-time" alone. The emphasis must be on ***outcomes*** achieved rather than on ***courses*** taken and on ***learning*** rather than ***memorizing***.

Education and work can no longer be seen as two separate endeavors. Changes in the job market are occurring at a rate four to five times faster than curriculum and organizational changes in our schools and we will not succeed in creating effective school-to-work transitions until business is an equal partner at the table with educators.

We must identify the jobs that will be available in the future and the education, skill-level and training that will be necessary to obtain those jobs. Both education and business must reach consensus on the desired outcomes of the educational process and then work together to create a system that will facilitate these expectations in the most effective manner possible.

The discussion should not center around whether we can afford to make the changes that are necessary, but whether we can afford not to. If our workers and businesses have any hope of competing in the global economy, we have no choice.

REDEFINING THE PURPOSE OF EDUCATION

* * *

OUTLINE OF RECOMMENDATIONS

I *WE MUST REDEFINE THE PURPOSE OF EDUCATION*

The purpose of Michigan's educational system must be to provide **all students** with an education, skills and training needed to enable them to make a seamless transition from school-to-work.

The focus of education must be on the **achievement of competencies and mastery of skills** that students will need in the 21st Century.

To accomplish this, it is recommended that:

A. Beginning in 1993 and over the next 8 years, schools must develop and implement a plan to integrate academics and relevant applications to work in elementary, middle and secondary schools and provide students with the basic and expanded skills, knowledge, competencies and behaviors they will need in the workplace and as an adult.

B. Using existing curriculum and studies as the basis, schools must build interdisciplinary packages that focus on and incorporate both the **expanded** and **higher-level** basic skills that students will need in the workplace.

C. Education must provide all students a continuum of school-to-work transition programs that will enable both college-bound and non-college bound students the ability to move on to more specialized training in a variety of fields by building upon the applied academic skills learned in school.

II *WE MUST IDENTIFY THE JOBS THAT WILL BE AVAILABLE IN THE FUTURE AND THE EDUCATION, SKILL-LEVEL AND TRAINING THAT WILL BE NECESSARY TO OBTAIN THOSE JOBS.*

To ensure that our students will have the skills necessary for future employment, a comprehensive and coordinated statewide plan must be developed for obtaining up-to-date labor market data; disseminating information on the level of education, skills

and training individuals will need to become employed; the methods that should be used for evaluating competencies in the skill areas and for determining the ways in which educational programs can be improved and expanded to meet both current and future employment demands.

To accomplish this it is recommended that:

A. *A STATEWIDE CABINET ON CAREER/TECHNICAL EDUCATION* be established as follows:

1. *Appointment/Composition of the Cabinet*

Beginning in 1993, a Statewide Cabinet on Career/Technical Education shall be created, composed of 14 members to be appointed in the following manner:

a. Based on nominations from the business and education communities and organized labor, the Governor, Speaker of the House and the Senate Majority Leader will each appoint 3 members to the Cabinet -- one representing business, one representing education and one representative from organized labor.

b. At least one member representing education shall be a teacher.

c. A delegate from an organization representing Vocational Education, a representative from the State Board of Education, the Superintendent of Public Instruction and the Directors of the Departments of Labor and Commerce shall also serve as voting members of the Cabinet.

2. *Length of Terms*

a. Initially, of the 9 members appointed as representatives of the business, education and labor communities, three will serve for five years, three will serve for four years and three will serve for three years.

b. In the future, members appointed to the Cabinet shall serve for three years.

c. The Governor, Senate Majority Leader and Speaker of the House shall confer together to ensure that no more than one member from each of the three representative groups shall

serve for 5 years, no more than one member from each group shall serve for 4 years and no more than one member from each group shall serve for three years.

3. Officers

a. The Governor, with the advice and consent of the Speaker of the House and the Senate Majority Leader, will appoint the Chair of the Statewide Cabinet who will then serve for three years.

b. At the end of the initial appointment, the Chair of the Cabinet will be elected annually by a majority vote of the members serving on the Cabinet.

c. The Vice Chair and Secretary of the Cabinet will be elected annually by a majority of the members appointed and serving on the Cabinet.

d. The length of terms for the Vice Chair and Secretary of the Cabinet will be determined by a majority vote of the members serving on the Cabinet.

e. The Cabinet will establish, based on the statutory authority given to the Cabinet, the appropriate and necessary by-laws by majority vote of the members serving.

4. Authority, Staffing, Reporting Requirements

a. The Statewide Cabinet will be under the direction of the Legislative Council and will be provided with sufficient staff to enable it to accumulate the needed information and perform the responsibilities as directed in statute.

b. The Cabinet shall present its initial recommendations to the Governor, both Houses of the Legislature and to the State Board of Education **no later than January of 1994** and annually thereafter

B. The charge to the Cabinet shall be as follows:

The cabinet shall be responsible for developing and, pending legislative approval, implementing a plan for gathering and disseminating accurate information on current and anticipated employment needs, determining the

level of skills and education that will be required for employment and for assisting local and intermediate school districts expand and improve existing educational programs to meet future employment needs.

The plan must include, but is not limited to, all of the following:

1. The criteria and method for establishing a new **STATEWIDE LABOR MARKET INFORMATION EXCHANGE SYSTEM,** comprised of self-governing **State and Local Occupational Councils.**

   a. The **State Occupational Councils** shall be composed of professionals representative of major occupational areas and shall be responsible for providing information on current and anticipated employment needs, including the education and skills that will be required, and for developing a uniform standard of competency for each occupational area.

   b. **Local Occupational Councils** shall be responsible for assessing and providing information on local and regional needs and assisting local and intermediate school districts implement needed changes.

2. The criteria and method for determining the competencies, skills and knowledge, including "employability" skills, that will be needed in the workplace, based on recommendations made by professionals from the Occupational Councils.

3. The criteria and method for determining whether existing curriculum and programs, based on the Model Core Curriculum requirements outlined under P.A. 25, are reflective of the needed competencies/skill levels and a process for modifying or expanding programs if it is determined that changes are necessary.

4. The criteria and method for establishing the mechanisms that may be utilized in assessing whether pupils have attained the expected competencies/skills levels.

5. The criteria for developing and coordinating apprenticeship, internship and cooperative educational experiences/programs in the private sector work setting.

6. The criteria and method for identifying the ways in which existing revenue is being used to train/educate individuals for the workplace -- including state, federal and private resources -- and recommendations

on a more efficient and effective use of such funds and on whether additional funding is needed and for what purpose.

7. The criteria and method for analyzing the educational expectations of community colleges and institutions of higher education and recommendations pertaining to the role each should play in helping to provide students with a seamless transition from high school to college or work.

8. The criteria and methods for determining how the Cabinet will provide ongoing oversight over the **Labor Market Information Exchange System**, the State and Local Occupational Councils, including coordinating, monitoring and modifying the program as necessary.

III. THE FOCUS OF EDUCATION MUST BE ON THE ACHIEVEMENT OF "COMPETENCIES" AND "MASTERY OF SKILLS" THAT STUDENTS WILL NEED IN THE 21st CENTURY.

We must ensure that our students have the competencies and mastery of skills needed for the world of work. We can no longer afford to graduate students based on **"seat-time"** alone. The emphasis must be on ***outcomes*** achieved rather than on ***courses*** taken and on ***learning*** rather than ***memorizing***.

To accomplish this the following is recommended:

A. All students must be given assistance in developing and maintaining an ***Individualized Education/Employability Development Plan*** and portfolio of academic and personal achievements.

B. Schools must teach and incorporate into their educational program the total array of skills, knowledge, behaviors and proficiencies pupils will need in the workplace, based on the recommendations made by the Statewide Cabinet.

Particular emphasis must be place on relevant reading, writing, speaking, listening, mathematics and expanded basic skills taught at the application level or higher.

C. Teacher training and professional development must be ongoing, extensive and a top priority if we want and expect our schools to keep pace with the changing needs of business.

D. Schools must provide a minimum of 200 days, totaling 1200 instructional hours.

E. Required Foundation Skills and Assessments for Students

1. All students must be able to demonstrate a **mastery of basic skills and subject area knowledge** before being permitted to advance to higher levels of learning in any given subject area.

   a. Students must be permitted to work at their own pace. Rather than grade-level promotions, students should be advanced based upon successfully **mastering** individual **subject areas and skills.**

2. Assessments must be outcome based and reflective of the competencies outlined by the Statewide Cabinet and the State Occupational Councils.

3. Any student unable to successfully demonstrate a mastery of the basic skills or subject area knowledge, must be provided with additional support and help until they are able to meet the required competencies in any given subject area.

4. Pupils achieving the defined competencies in basic skill areas must be awarded ***CERTIFICATES OF INITIAL MASTERY*** and students achieving higher skill-level attainment must be provided ***CERTIFICATES OF ADVANCED MASTERY*** in recognition that they had achieved the expected outcomes.

5. Based on information provided by the Statewide Cabinet, students must be provided with ongoing comprehensive, accurate information and counseling about employment opportunities and the skills needed to fulfill them no later than during their middle school education.

6. Students can no longer be permitted to dropout of high school. Students must be expected to stay in school until age 18 or until they have mastered the expected competencies.

F. Integrating Academics and Applications to Work

7. Based upon the anticipated needs of business, as determined by the Statewide Cabinet, students entering high school must be given the opportunity to pursue a wide range of career/technical programs designed to provide them with the skills and qualifications needed to become employed or obtain additional education and training.

8. The student's ***Individualized Education/Employability Plan*** must clearly outline the necessary information for successfully completing the areas of study selected by the student.

9. A comprehensive, work-site based education must be provided for students -- including apprenticeships, internships, cooperative-education programming in a wide range of occupational fields -- and complimented with related and advanced subject area study in high school.

10. Based on the work-related skills and education requirements identified by the Statewide Cabinet, students who successfully complete a full Career/Technical Area of study must be provided with a ***CERTIFICATE OF ACHIEVEMENT*** **that would be recognized by business** as an indication of competency in the subject area.

11. Schools must provide both students and business with an **Educational Warranty**, based on the proficiency/skill levels recommended by the Statewide Cabinet.

    If students are found to be deficient in the skills, training and/or education recommended by the Statewide Cabinet, the graduating high school must be held responsible for providing them with the additional education or providing the financial assistance necessary for such students to enroll in any other Michigan high school.

12. Business and higher education, working in concert with K-12 education, must play an active role in providing students with a seamless transition from school-to-work.

IV. *BUSINESS AND HIGHER EDUCATION ARE ESSENTIAL LINKS IN ENSURING THAT STUDENTS ARE PROVIDED WITH A SUCCESSFUL SCHOOL-TO-WORK TRANSITION.*

Education and work can no longer be seen as two separate endeavors. We will not succeed in making an effective school-to-work transition until business is an equal partner at the table with educators.

Both education and business must reach consensus on the desired outcomes of the educational process and then work together to create a system that will facilitate these expectations in the most effective manner possible.

To do this it is recommended that:

A. In addition to advising the Statewide Cabinet on the skills and knowledge that will be needed, business must work cooperatively with schools and other institutions to develop school-to-work strategies, including providing on-the-job training and employment orientation for students wishing to pursue such areas of study.

B. Business and higher education must assist in the effort to provide work-based education by developing models which expand the concept of apprenticeship programs that can be applied to a variety of occupational areas and the appropriate curriculum to compliment such learning.

The aspects of apprenticeship that can be applied more broadly include:

1. The basic format of structured on-the-job training combined with classroom or theoretical instruction,

2. The formal recognition, such as accreditation afforded programs and the awarding of worker credentials upon completion,

3. The transfer of skills on the job through a mentor or skilled supervisor,

4. The opportunity for the worker to acquire skills while earning a wage, and

5. A contract or agreement between the training sponsor and the trainee on the process and outcomes of training.

C. The new models must emphasize career areas, rather than specific jobs so that apprentices are exposed to a variety of occupations within a career area. In all instances, the focus must be on providing students with broad and widely applicable knowledge and job skills.

D. As the major consumer of the educational product, business must also invest in the educational system by assisting in ongoing teacher training, providing qualified personnel, purchasing equipment and furnishing ongoing information on the changes that occur in the workplace.

E. Community Colleges, Proprietary Schools and Universities must be encouraged to provide advanced-placement for students successfully completing a Career/Technical area of study, by taking into account the credits earned from such programs.

F. Higher education should collaborate with K-12 education to make equipment, labs and supplies available when individual purchase of such equipment is not cost effective.

V. *FUNDING CANNOT BE ADDRESSED WITHOUT UNDERSTANDING WHAT EXISTS TODAY AND WHAT WILL BE NEEDED IN THE FUTURE.*

Before now, the issue of improving public education has always centered around funding -- how much will it cost, who will get it, what kinds of programs will it buy? We have rarely, if ever, asked what we got for it or what was needed.

It must be realized, however, that funding cannot be addressed without a clear understanding of what exists today and what will be expected and needed in the future.

Accordingly, as mentioned previously, it is recommended that part of the charge given to the Statewide Cabinet must be to determine the skills and knowledge that will be needed and to examine and evaluate both existing programs and the funding that is being allocated for this purpose from all sources.

Once this has occurred, then the Cabinet will have the information necessary to determine whether existing funds are being used as efficiently and effectively as possible and to make recommendations as to whether additional funding is needed and for what purpose.

In the meantime, the discussion should not center around whether we can afford to make the changes that are necessary, but whether we can afford not to. If our workers and businesses have any hope of competing in the global economy, we have no choice.

INDIVIDUALS WHO TESTIFIED

Patricia Wagner, President, Michigan Council of Vocational Education.

Fred Keller, President, Cascade Engineering.

Jerome Smith, Coordinator, Minority Programs: Modern Tool and Engineering.

Haans Peteredeger, foreign language instructor, Ann Arbor Public Schools.

Wolfgang Linz, Executive Director, cds International Inc.

Tony Gordon, Consultant, Great Britain Model Technology Systems, Stafford, England.

Jan Danford, Director, Educational Development, General Motors Corporation.

Joe Neussondorfer, Director, Member Services, Associated General Contractors of America.

Ron Hilton, State Director, U. S. Department of Labor, Bureau of Apprenticeship Training.

Joe King, Director of Skilled Trades, AFSCME.

Glenn M. Bivens, Apprenticeship Training Representative, U. S. Department of Labor, Bureau of Apprenticeship Training.

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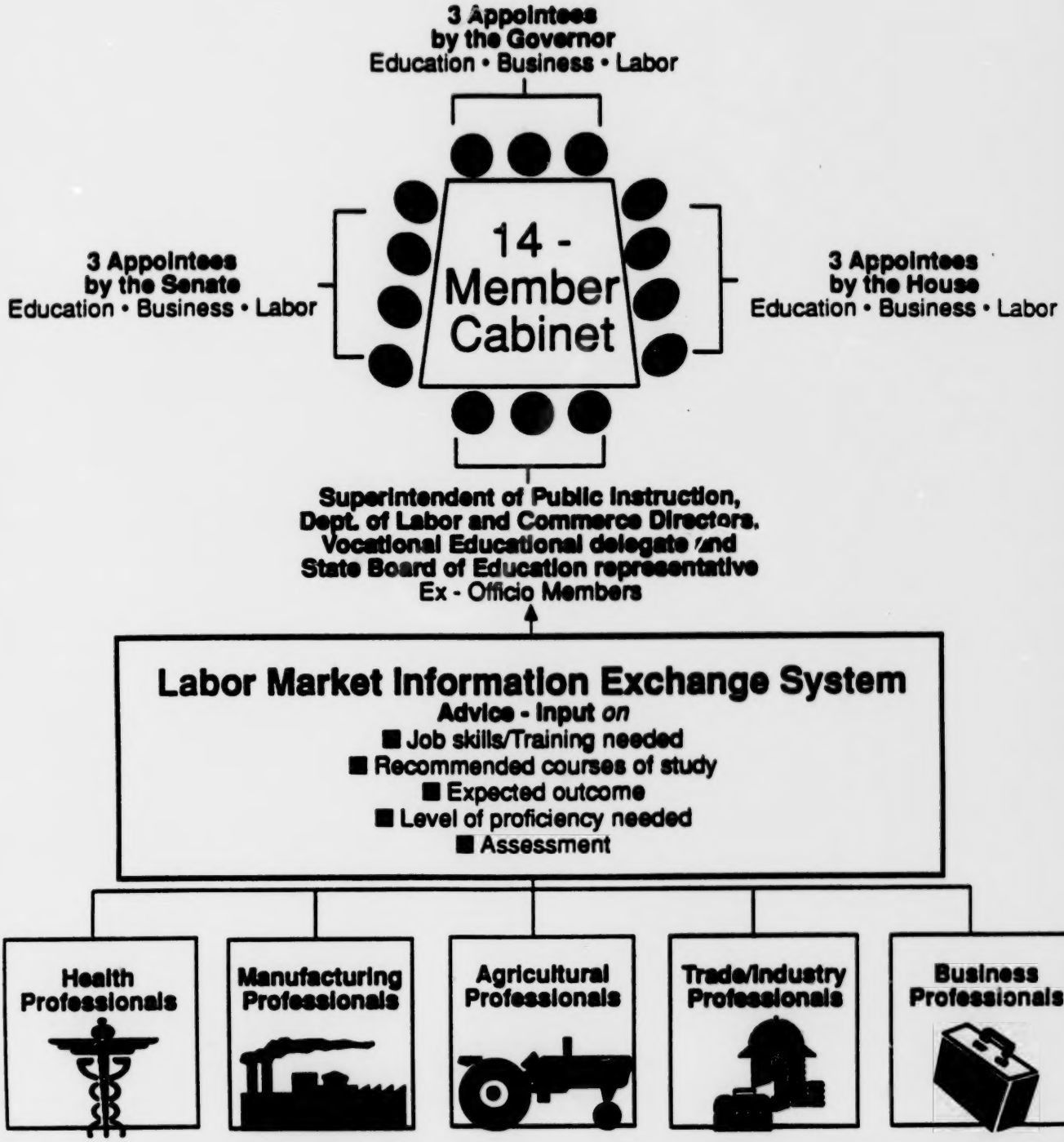
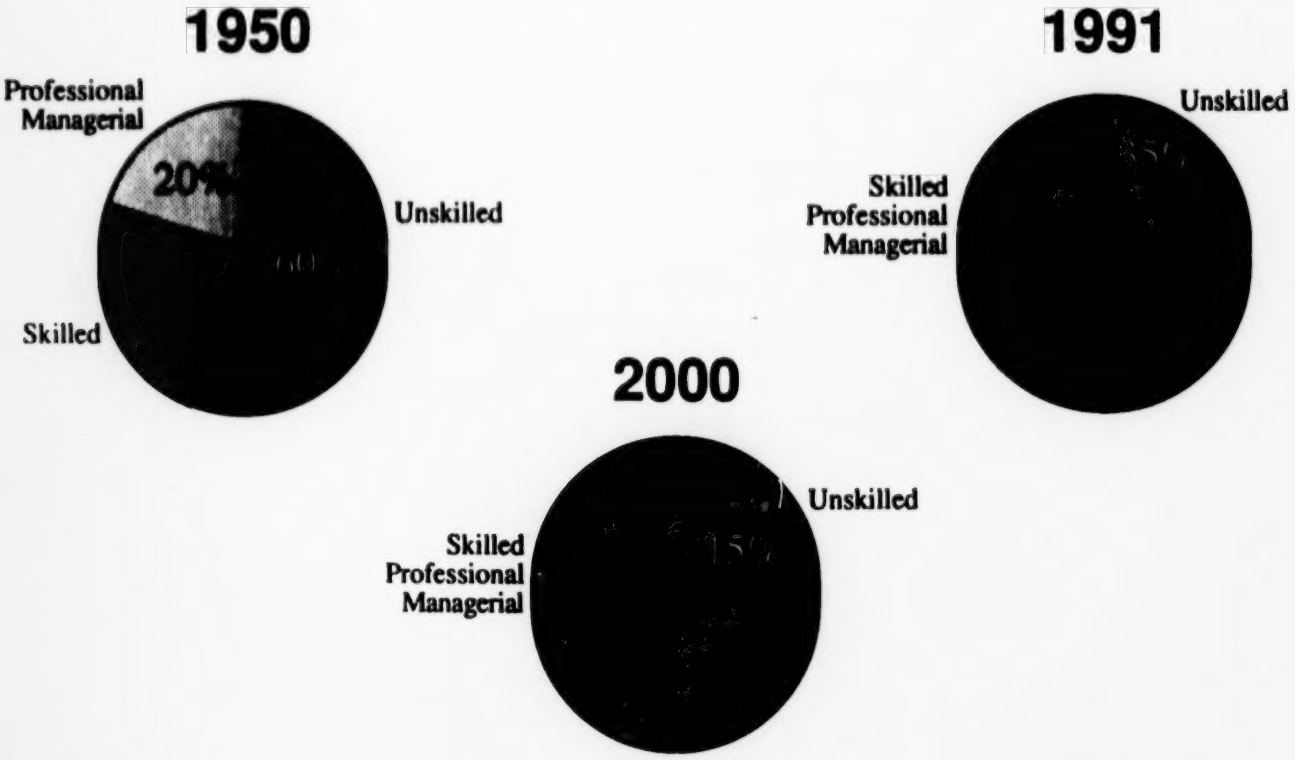
Statewide Cabinet on Career/Technical Education



Work Force 1950-2000



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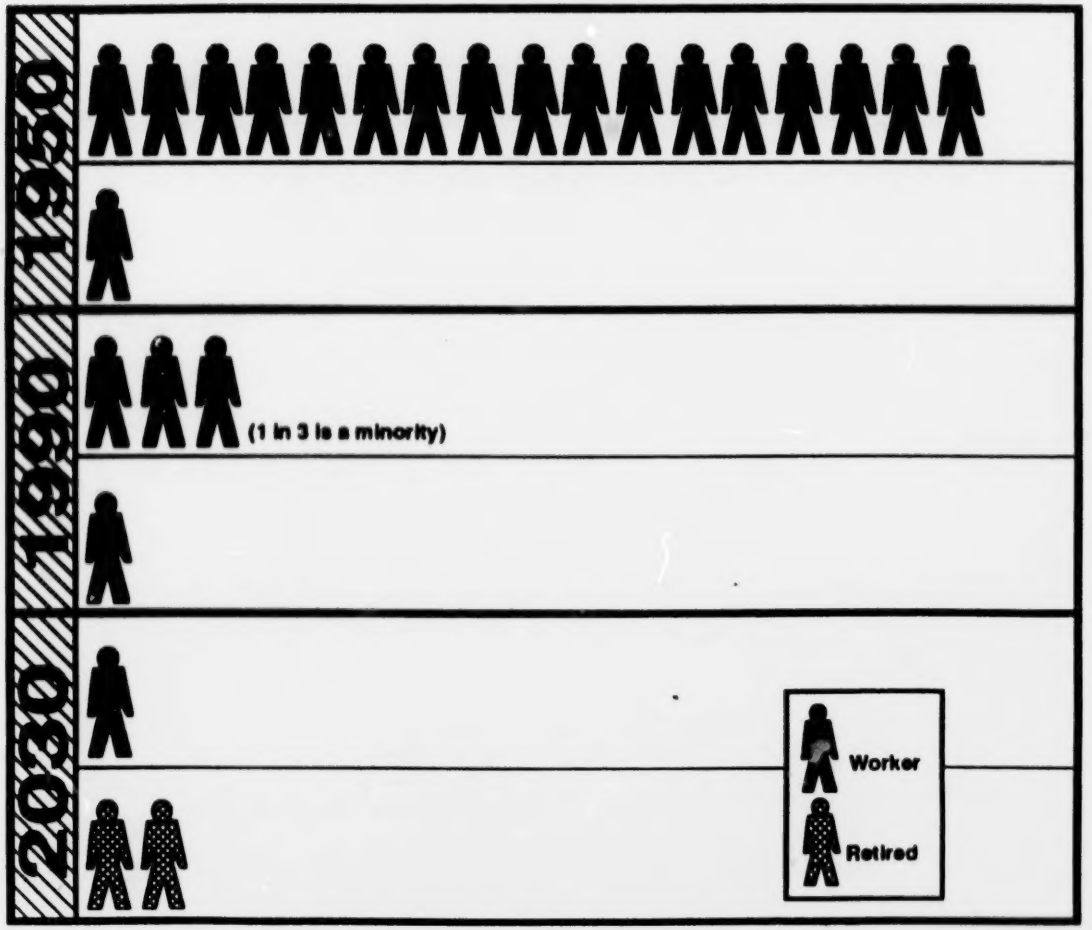
The Shrinking Work Force



U.S. Worker's Wages

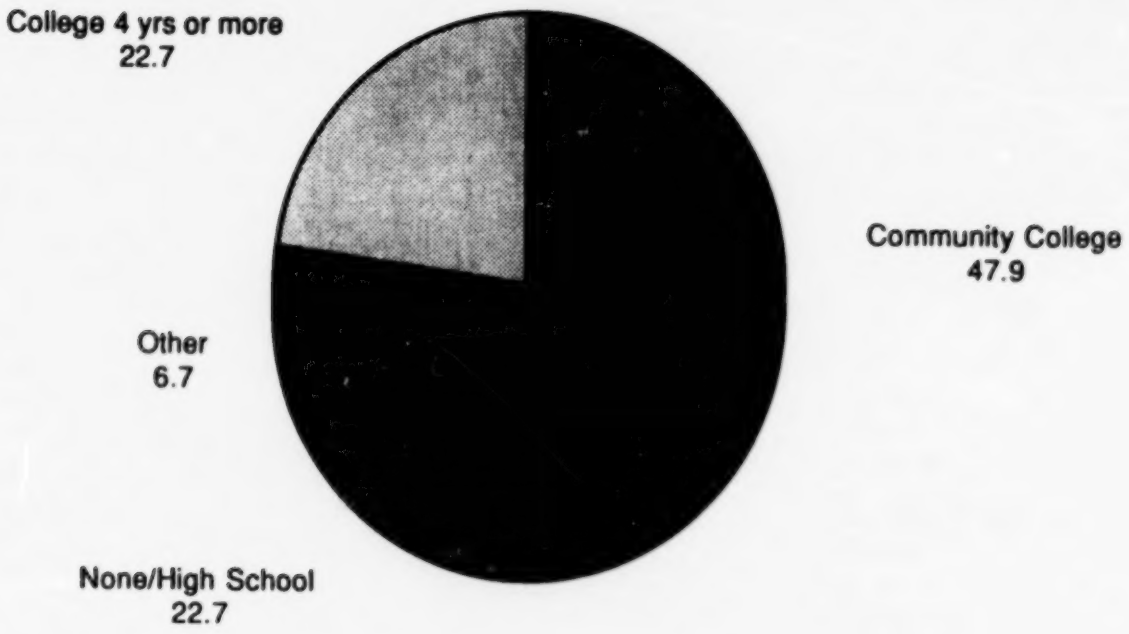
1980 - 1st in the world

1990 - 12th in the world

2000 - 25th?

Technology and Occupations

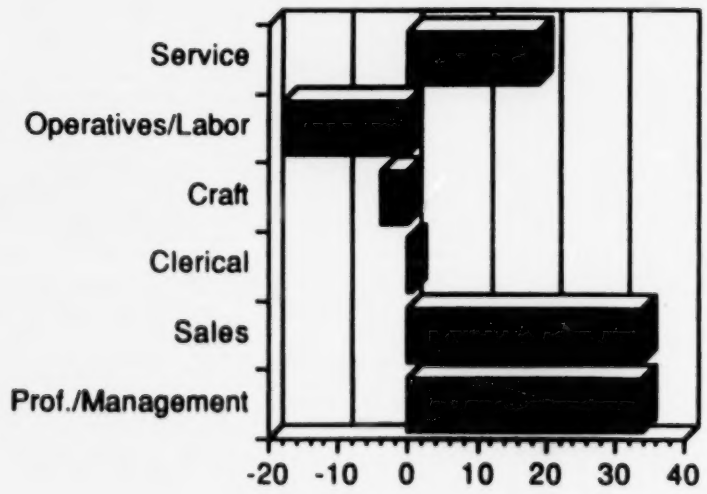
Educational Entrance Requirements



MICHIGAN

OCCUPATIONAL EMPLOYMENT CHANGE (%)

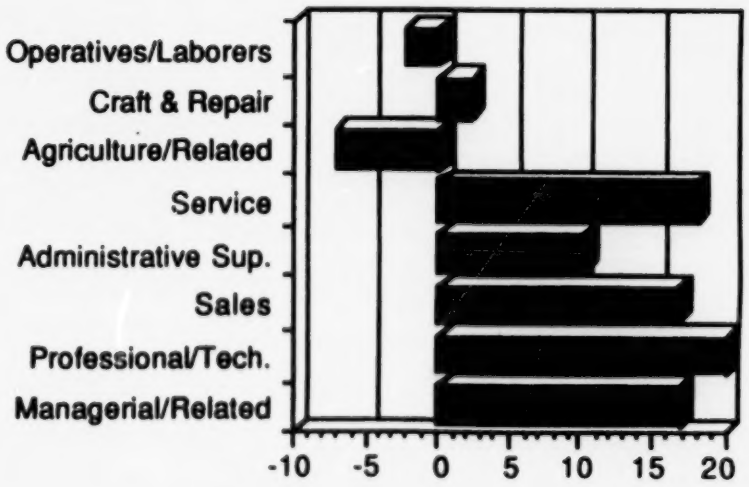
1979 - 1989



MICHIGAN

OCCUPATIONAL GROWTH 1988 - 2000

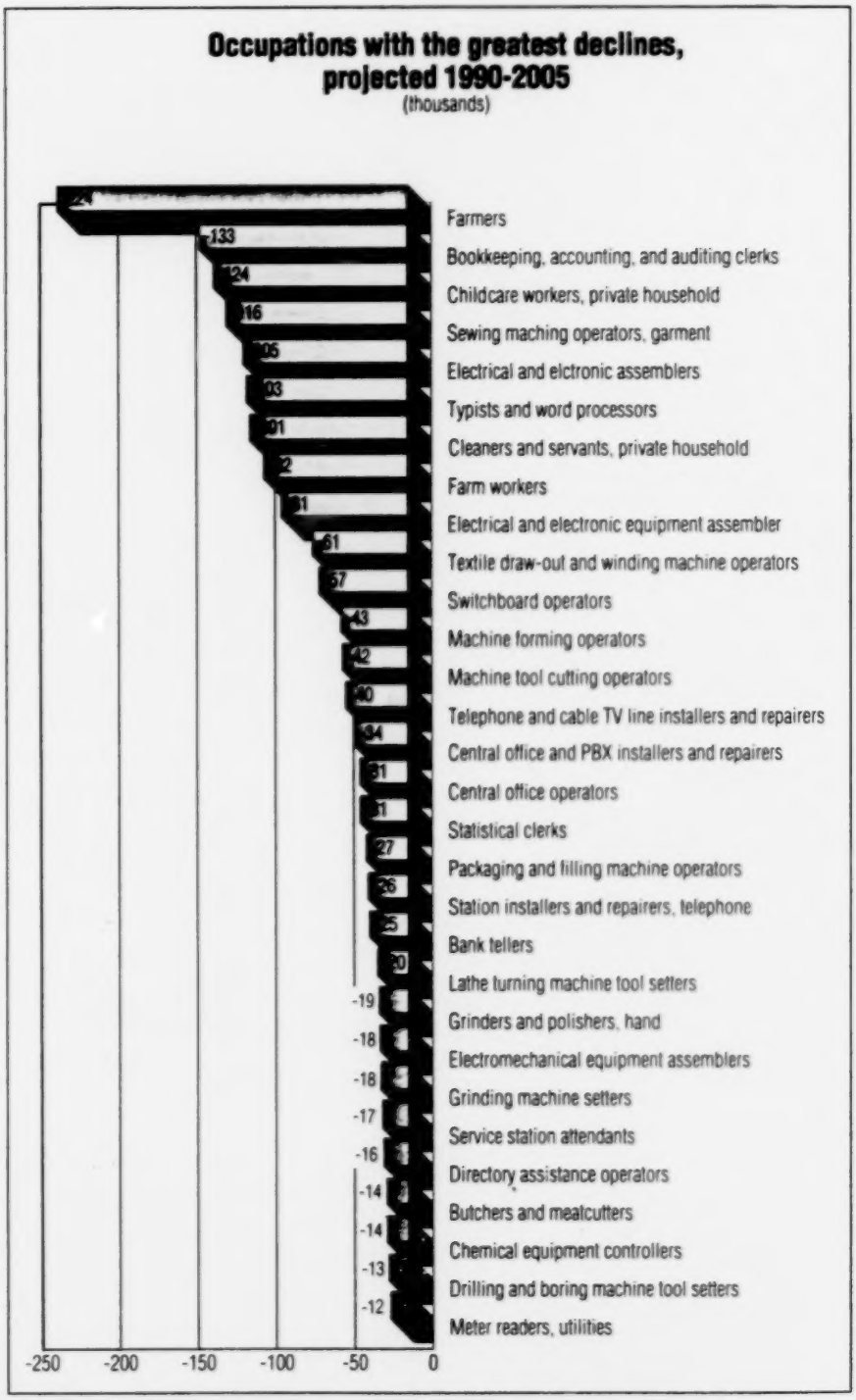
(Percent Change)



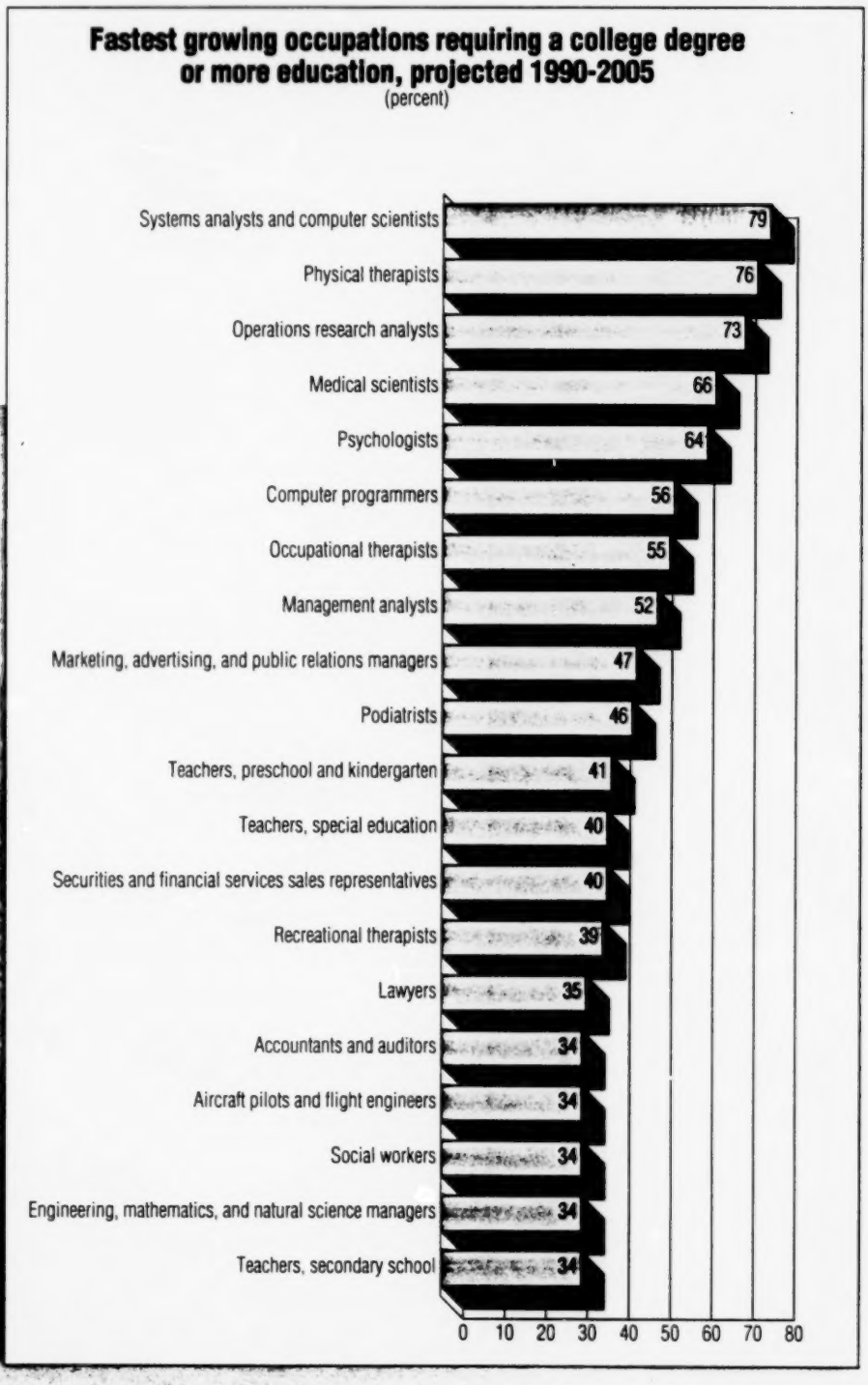
Declining occupations

Occupations with the greatest declines in employment are concentrated in declining industries or affected by technological change. Some occupations are affected by both factors.

About half the declining occupations are concentrated in manufacturing.

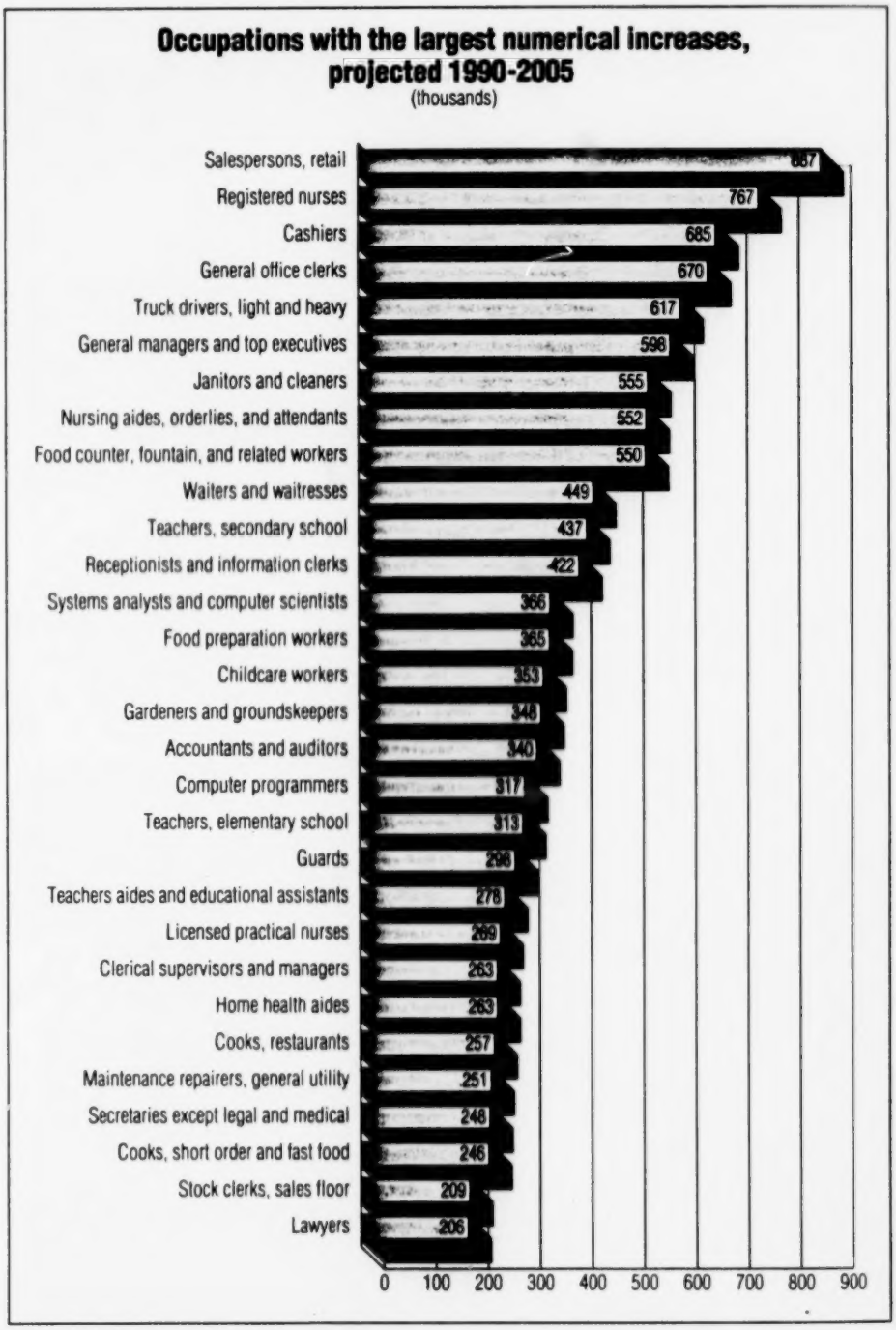


Of the 20 fastest growing occupations requiring a bachelor's degree or more education, the top seven are tied to the health services industry or computer technology.


Fastest growing occupations requiring a college degree or more education, projected 1990-2005
(percent)
Systems analysts and computer scientists 79
Physical therapists 76
Operations research analysts 73
Medical scientists 66
Psychologists 64
Computer programmers 56
Occupational therapists 55
Management analysts 52
Marketing, advertising, and public relations managers 47
Podiatrists 46
Teachers, preschool and kindergarten 41
Teachers, special education 40
Securities and financial services sales representatives 40
Recreational therapists 39
Lawyers 35
Accountants and auditors 34
Aircraft pilots and flight engineers 34
Social workers 34
Engineering, mathematics, and natural science managers 34
Teachers, secondary school 34
0 10 20 30 40 50 60 70 80

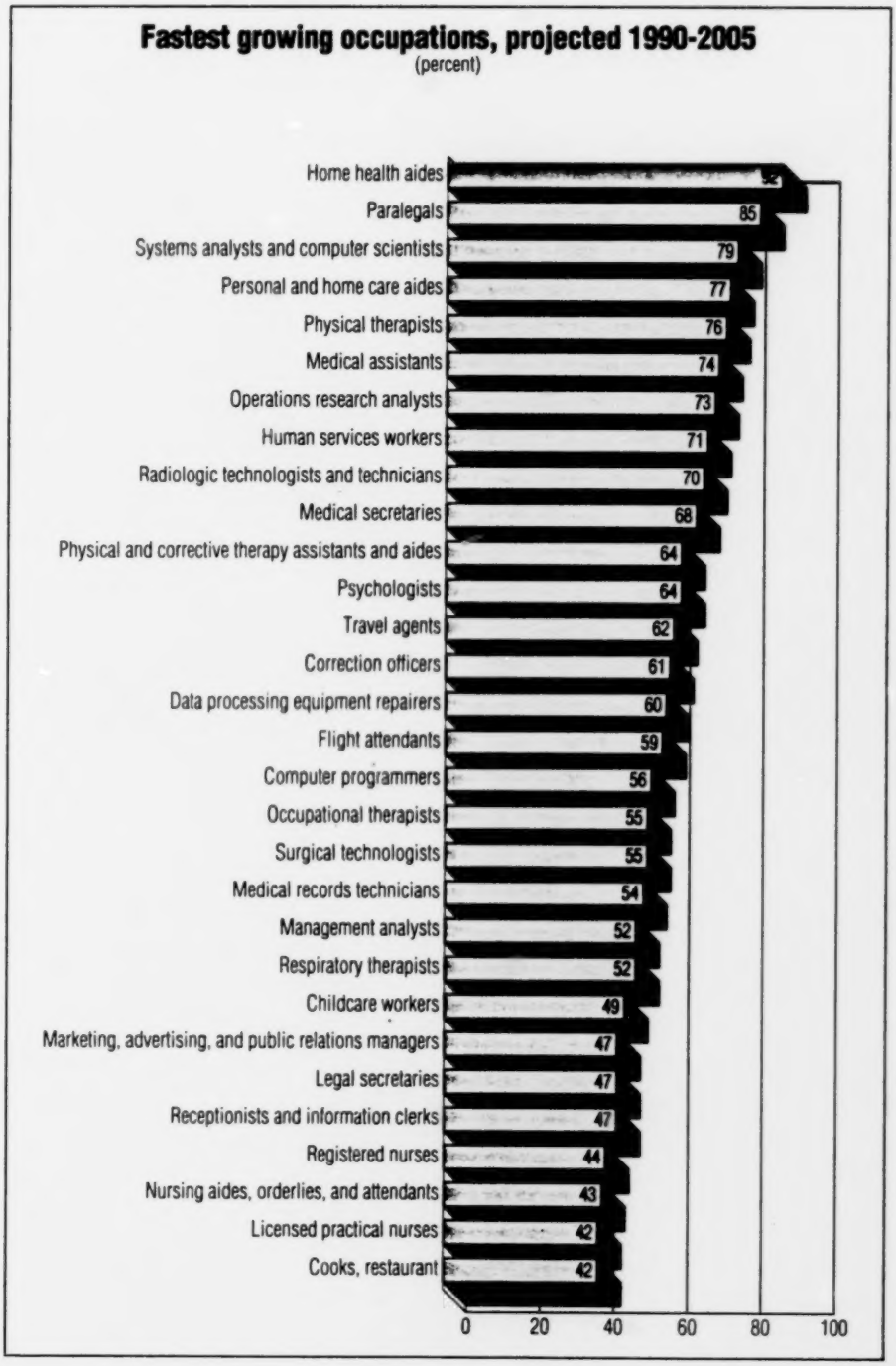
Occupations gaining large numbers of jobs

Among the 500 occupations for which projections were developed, 30 will account for half of total employment growth over the 1990-2005 period.



Fast growing occupations

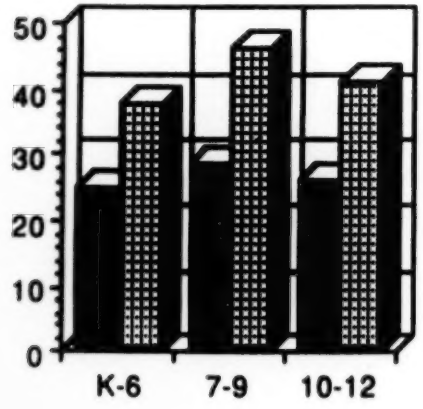
Growth of half of the 30 fastest increasing occupations stems from the rising demand for health services. Half of the fastest growing occupations are professional and technical occupations that require significant postsecondary education.



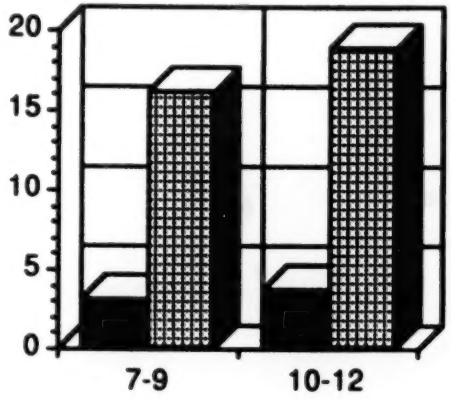
Time spent on Education

United States VS Japan

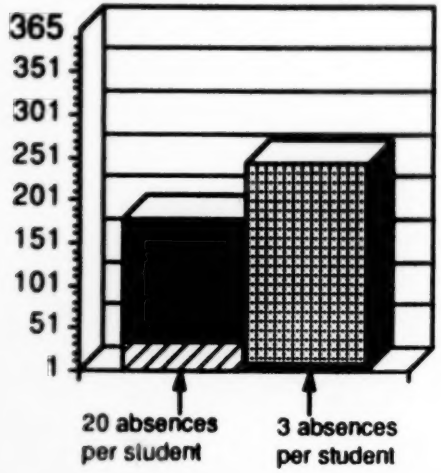
Hours in school per year



Hours of homework per week



Days in school per year



United States

Japan